DOCUMENT RESUME

ED 109 521 FL 007 524

AUTHOR Adler, Alfred; Thomas, Jean Jacques
TITLE Teaching French Transformational Grammar by Means of Computer-Generated Video-Tapes.
PUB DATE Apr 75
NOTE 16p.; Paper presented at International Conference on Computers and the Humanities, (Second, Los Angeles, Calif., 3-6 April, 1975); charts may reproduce poorly

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage
DESCRIPTORS Audiovisual Aids; College Language Programs; *Computer Assisted Instruction; *French; Higher Education; Instructional Media; *Language Instruction; Language Skills; Material Development; Second Language Learning; Syntax; Teaching Methods; *Transformation Generative Grammar; Transformations (Language); *Video Tape Recordings

ABSTRACT

This paper describes a pilot program in an integrated media presentation of foreign languages and the production and usage of seven computer-generated video tapes which demonstrate various aspects of French syntax. This instructional set could form the basis for CAI lessons in which the student is presented images identical to those on the video tapes and lessons are tailored to his particular need. A study of the logical concepts underlying transformations teaches the student how to transform sentences to alter emphasis or meaning and shows the relationship between the transformation and the intonation of the spoken sentence. The student's goal is to understand transformational process and thereby develop competence. The writing of the visual material was under computer control. The computer wrote on the screen of the terminal and moved phrases in a predeterminated manner and with the desired timing. The blanked write mode permits storing phrases in the terminal memory so that the entire phrases can be made to reappear instantly. The result of the informal student evaluations of this program revealed that the students found the course more interesting and easier than they expected and that they believed the audiovisual definitely aided their learning the necessary material. (Author/CLK)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

ED119521

TEACHING FRENCH GRAMMAR BY MEANS OF COMPUTER GENERATED VIDEO TAPES

Alfred Adler
Center for Research on Learning and Teaching
University of Michigan, Ann Arbor, MI 48104
(313)763-0158

Jean-Jacques Thomas
Department of French and Romance Philology
Columbia University , New York, N.Y. 10027
(212) 280-3678

FL007524

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

Recent advances have changed the teaching of French grammar from the teaching of many seemingly unrelated rules and examples to the teaching of the structure of sentences and how transformation can be performed on them to change their meanings. Traditional teaching of grammar and syntax has been rather logically oriented allowing conceptually at least the use of some CAI. With the advent of translational semantics the computer can now be used much more directly and effectively. Translational semantics is the study of how a sentence should be changed if one wishes to change its meaning. An example of such a transformation in English would be the transformation of the sentence "I like ice cream." to the negative sentence "I do not like ice cream." This transformation implies the addition of two words to the sentence, one being the word "not" which changes the positive sentence to a negative one and the other word being the helping verb "do" which changes the structure of the verb in the sentence. Since the computer is uniquely suited to display logical results, it can be used advantageously to the extent that relational semantics can be logically structured.

The present project is seen both as the production of computer generated video tapes to demonstrate translational semantics and as a pilot project in an integrated media presentation of foreign languages. The current project includes the production and use of seven video tapes to explain various aspects of French translational semantics. These tapes are made available to the students in a library-resource center environment. However, since the images on the tapes are computer generated and can be recalled and altered by the computer at will, this instructional set is forming the basis of a set of CAI lessons which are being planned and implemented in which the student can be presented identical images

to those presented to him on the video tapes. Additional instruction and exercises can then be tailored to the individual student's needs.

CONCEPTS OF TRANSFORMATIONAL GRAMMAR IN FRENCH

Transformational grammer is based in large part on the work of Noam Chomsky[1] on the structure of English syntax. This has been applied to French and its unique syntactical problems. The basis of transformational grammar is that one can describe the transformation of sentences in terms of logical operators operating on these sentences. The usual structure of the French sentence is subject - (verb - complement) where the complement to the verb may for example be an object or an adverbial phrase. The complement in such a sentence however follows the verb and is associated with it. An example of such a sentence in which the complement is a direct object is:

Je lavais la voiture.

(I wash the car.) One can transform this sentence in various ways to change its emphasis or its meaning. The transformation which changes the complement, here a direct object which is a noun, into a pronoun would change the position of the complement from one following the verb to one preceding the verb.

Je la lavais.

Another such transformation would be one which might be applied to emphasis on the complement.

---

1 Syntactic Structures, Mouton and Co., 1957, The Hague

La voiture, je la lavais.

In this case the complement is moved out of its usual position next to the verb, but because of intimate relationship to the verb the pronoun, la, must be added to the sentence. A study of the logical concepts underlying such transformations can be very useful to the student since it then allows him to transform new sentences to alter their emphasis or meaning, and since there is a relationship between the transformation and the intonation of the spoken sentence. In this way the number of formal questions with which the student must cope can be limited to those concerned with the logical concepts underlying the transformation. One may ignore all questions of meaning and deal only with those concerning the form of the sentence. This aids the non-native speakers in developing competence in the language. Once an understanding of the processes of building and transforming sentences is obtained by the student, he is able to more easily make use of complicated structures in his speech.

THE COURSE

The undergraduate curriculum for students wishing to obtain degrees in teaching French on a secondary level includes the introductory courses and courses in phonetics, morphology, literature, stylistics, expression and grammar. These tapes were produced for French 453 at the University of Michigan, a course for advanced undergraduates who have already had the introductory courses and a course in morphology. This will be the last course in French grammar which most of these students will take before they begin teaching French on the secondary level. It meets

twice a week for a total of three hours per week and is taken by about 35 students per year. The students have already learned the basics of French both as a spoken and written language and the basics of French grammar. There are two possible approaches to the teaching of this course, either to reinforce the grammatical rules and to delve more deeply into the fine points of that grammar or to try to develop a better understanding of why the grammar is structured as it is and to study the basic structure and logic of the grammar which is already well known by the students. This course is based on the second approach in hopes that a better understanding of the logic of the grammar will help the students teach more effectively and to express themselves in French more effectively. It is for this reason that transformational grammar has been introduced into the course. Because textbooks on this level using transformational grammar are lacking the best use must be made of every means available to aid the student. This implies that this course is a prime candidate for such a multimedia approach.

THE PROJECT

It is critical not only to show written and oral examples of how transformations may be applied to sentences but also to understand and feel the movement implied by such a transformation. It is precisely because it is so difficult to show such movement on a blackboard that a video tape becomes so meaningful, and computer generation of such a video tape becomes very useful. Such tapes are used outside of classroom as a learning aid presenting the movement associated with the transformation

operators; they could however form the outline of a set of CAI lessons. The project consists of the production of seven video-tapes using computer generated video and sound tracks in both French and English. The seven video tapes are:

1. Recognizing French Sentence Types.
2. The Notion of a "Phrase".
3. The Structure of a Noun Phrase.
4. The Structure of a Verb Phrase.
5. The Kernel Sentence.
6. Sentence Relationships and Complex Structures.
7. Basic Transformations.

Each of these tapes are approximately ten minutes in length. The set may be thought of as the skeleton of the course presented as an animated blackboard.

PRODUCTION TECHNIQUES

Because a number of tapes were planned in this project and because this project could become the pilot project for a much larger project involving other foreign languages and other courses, it was thought very valuable to keep the production costs as low as possible. The video tapes were produced using the University of Michigan IBM 360/67 which was upgraded during the course of the project to an IBM 370/168 running under the Michigan Terminal System (MTS) with the joint efforts of staff from the Department of Romance Languages, the Center for Research on Learning and Teaching, and the Television Center. Recently a number of

alphanumeric refresh terminals have come on the market which have standard TV-type raster screens. One such terminal, a Tektronics 4023, was used in this project. The Tek 4023 is an alphanumeric cursor-addressable refresh terminal which was designed for business applications. This terminal was originally purchased as a teletype substitute but has found some much more sophisticated applications. This terminal has a 12 inch screen, 24 lines of 80 characters, full upper and lower case ASCII keyboard, and several write modes. These write modes include the normal mode of writing white characters on a black background, a reversed mode (black letters on a white background), a blinking mode, several dim modes, and a blanked mode with which one may write into the terminal memory but not on the screen until the mode is changed at which time the text pops on the screen. Since the screen raster is a TV-type raster a plug is provided at the back of the terminal for TV-compatible output. Although the signal is non-interlaced, this output may be connected to the input of video monitors or recorders. FORTRAN callable software support routines have been written to make the capabilities of the terminal readily available to the instructional user. A version of the interactive Pittsburgh Interpretive Language (CRLT-PIL) which allows calls to FORTRAN callable subroutines was used to generate the video images on the screen of the TEK 4023. The output of the TEK 4023 was connected to the input of a video recorder to create the video portion of the tapes.

The writing of all of the visual material was under computer control. The computer wrote on the screen of the terminal, moved phrases around in a predetermined manner and with the desired timing. By using the blanked write mode it is possible to store phrases or sentences in the

terminal memory in such a way that the entire phrase or sentence can be made to appear instantly. Figure 1 shows the typical computer output used to represent rising and falling intonation as well as an example of the intonation of a simple declarative sentence. Since the terminal is cursor-addressable the writing of sentences such as the one shown proceeds in the same way it would for handwriting even though several lines are used in somewhat arbitrary order. The optional ruling character set which was used to create the continuous lines in this figure also create the enlarged punctuation in figure 2 which illustrates the rising and falling intonations of simple sentences. In figure 3 the distinction between the logical form of a sentence and a sample sentence is clarified. After several examples are given in this way the viewer of the video-tape is asked to construct a sentence of a new type in figure 4 (a declarative positive sentence). Here the reversed writing mode is used for emphasis. The reference to the grammar text appears on the screen only after the student has had sufficient time to provide his own answers. Running the terminal at 300 baud, the usual communications rate on the University of Michigan Terminal System, the writing speed is fast enough to be a comfortable reading speed for most of the students. After the video portion of the tape was completed, the audio sound tracks were dubbed in English and French.

EVALUATION OF THE PROJECT

The traditional method of evaluating such a project uses comparisons of the amount of material learned by an experimental group when compared

to a non-experimental group. Because of the small number of students involved in this course, about 15-20 per semester, such an evaluation would not be practical since it would not have statistical significance. However even if the statistical significance of such a comparison were not a problem, such a study would be questionable since any change in the structure of a course tends to produce favorable results in such a comparison. It has been postulated that by changing the structure of a course the instructor shows his students that he is intimately concerned with their difficulties and therefore merely because of the show of concern, they tend to perform better.

In this course we have a more important factor to consider. There is no immediately available set of suitable instructional materials. A textbook on this level is not readily available, and other audio-visual and CAI materials have not yet been produced. By providing to the student the audio-visual materials necessary to learn the material, one should expect and in fact does see an improvement in the student behavior. This of course must be evaluated qualitatively, since the statistical significance of quantitative measurements would not be meaningful.

In informal student evaluations the following results were noted: (1) The students felt that the course was more interesting than they anticipated on the basis of discussions with former students. (2) It was easier and more fun than they had expected and that the audio-visual materials had aided their learning of the necessary material. (3) It appeared to the instructor based on examination performance that the students were learning more than before. (4) The students did suggest that more such material be made available for other courses, indicating that they felt the material was valuable to them. There were of course

several students that did not use the materials. They indicated that a lack of time was the reason and that they did not anticipate any benefit from the material. In general the students indicated that they would welcome and encourage the production of such materials in other courses.

SUMMARY

The project involved the overlap of the computing and audio-visual technologies in order to provide good learning resources to the students. The initial aspects of the project involve the production of seven video tapes. The production methods were aimed at the lowest possible cost which would result in a reasonable final quality. The methods of production, involving a form of computer graphics, lend themselves well to expansion to other instructional aids, particularly computer assisted instruction. Plans are continuing to produce CAI lessons based on these tapes. These lessons would present to the student some of the same images which he has already seen on the tapes, quizing him on this material, and presenting additional material as individually needed. Any viable method of successfully using hard copy computer output reduces the costs of CAI. The present project is seen as one possible solution to this cost problem and as an excellent opportunity to integrate the use of various media in the classroom.

FIGURE 1. Rising and falling intonation and an example of a simple declarative sentence.

FIGURE 2. Normal intonation of simple sentences using the option ruling character set of the TEK 4023.

FIGURE 3. Comparison of the formal structure of a sentence and an example of such a sentence.

FIGURE 4. Asking the student to write a negative declarative sentence of his own.

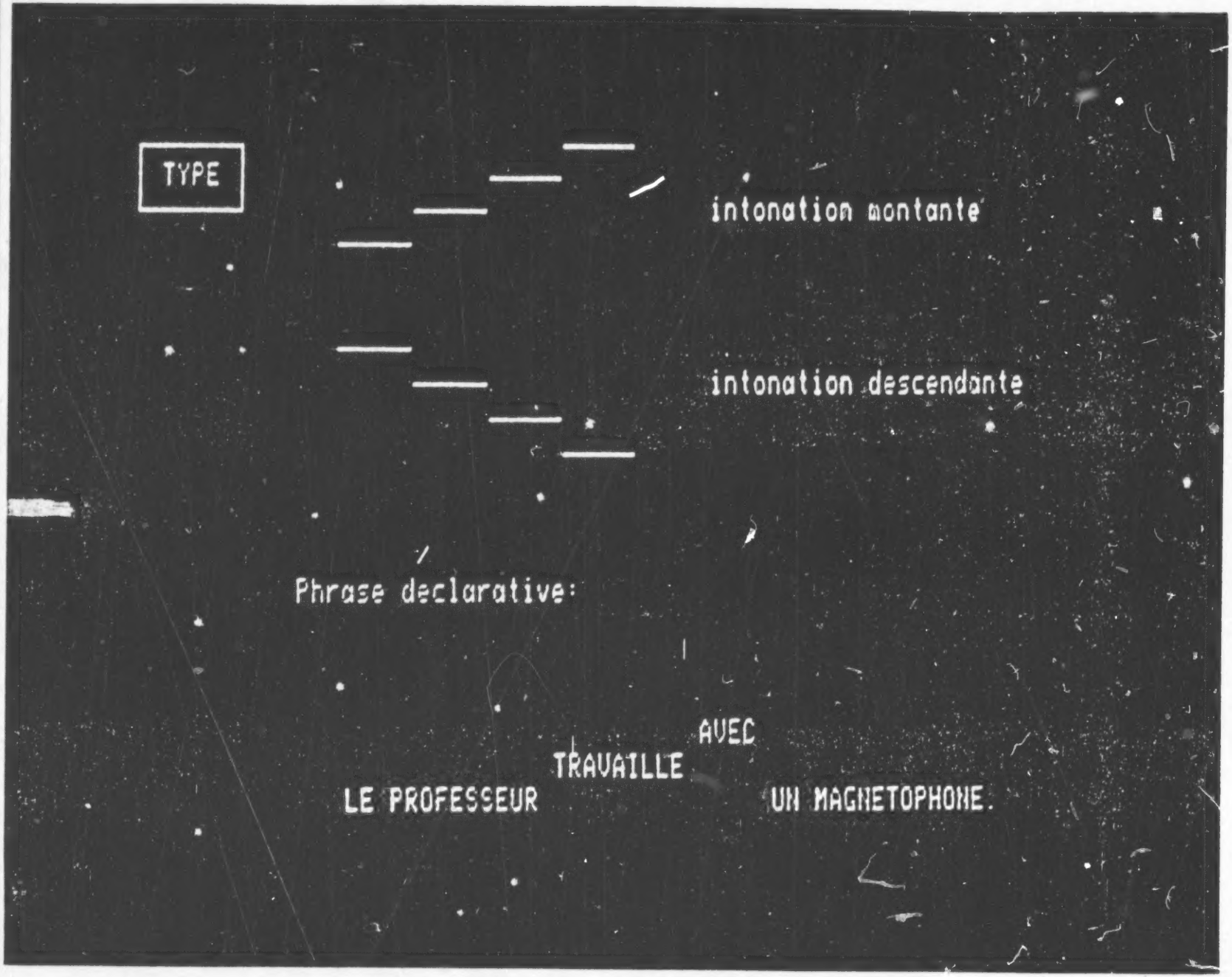
TYPE
intonation montante
intonation descendante
Phrase declarative:
LE PROFESSEUR
TRAVAILLE
AVEC
UN MAGNETOPHONE.

Fig 2

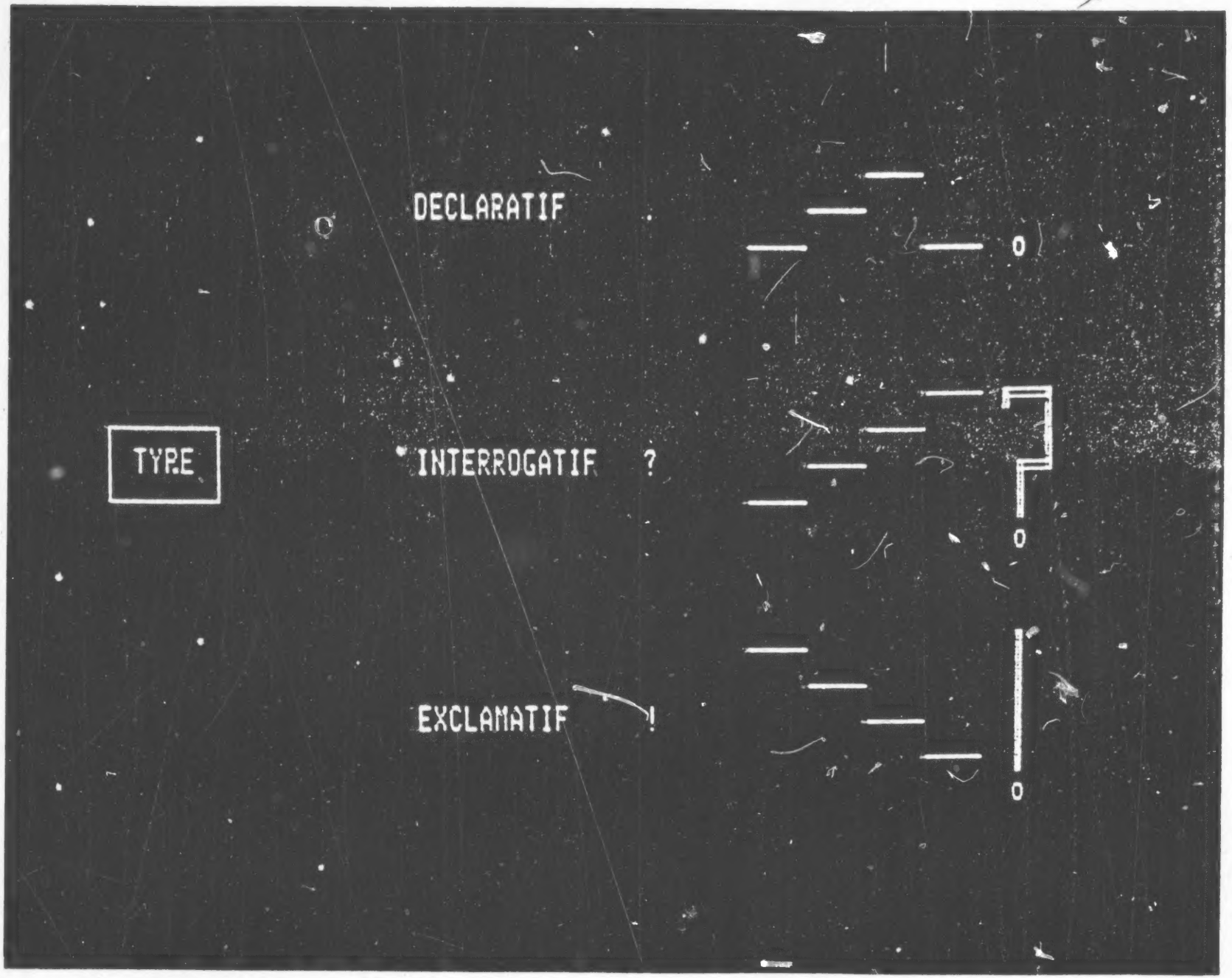

Fig 3

LE PROFESSEUR TRAVAILLE AVEC UN MAGNETOPHONE.

MATERIAU
TYPE
ACIER
FONTE
ANNEXE IEEE